DOCUMENT RESUME

ED 464 498 FL 027 259

AUTHOR Sidman-Taveau, Rebekah; Milner-Bolotin, Marina
TITLE Constructivist Inspiration: A Project-Based Model for L2 Learning in Virtual Worlds.
INSTITUTION Texas Univ., Austin. Foreign Language Education Program.
PUB DATE 2001-00-00
NOTE 21p.; Paper presented at the Texas Foreign Language Education Conference (Austin, TX, March 23-24, 2001). For the complete journal issue, see FL 027 255. Appendixes may not reproduce clearly.
PUB TYPE Journal Articles (080) -- Reports - Descriptive (141) -- Speeches/Meeting Papers (150)
JOURNAL CIT Texas Papers in Foreign Language Education; v6 n1 p63-82 Fall 2001
EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS College Students; *Computer Uses in Education; Constructivism (Learning); Cultural Awareness; Experiential Learning; Higher Education; Information Technology; Second Language Learning; *Spanish; *Student Projects; Teaching Methods; *World Wide Web
IDENTIFIERS Social Constructivism

ABSTRACT

Project-based learning can be used when creating simulated authentic cultural experiences via virtual trips on the World Wide Web. Project-based learning is a comprehensive, constructivist-based approach that engages students in the investigation of authentic problems. This paper focuses on the theoretical basis for project-based learning and describes an instructional model developed and employed by researchers at a large southwestern U.S. university. The model was put into practice with several Web-based Spanish language lessons for first-year Spanish students. Thousands of students engaged in virtual cultural experiences by taking a virtual vacation on the World Wide Web. Afterwards, students submitted enthusiastic comments (via student reflection forms) and described a variety of types of language and cultural learning experiences. Creative student products demonstrated their engagement in the lessons and their application of grammatical and lexical topics from the course. Extensive use of on-line language and cultural resources was also evident. Several challenges arose during the lessons (e.g., carrying out the constructivist-based elements, conducting formative assessment, and focusing on final products rather than processes). (Contains 34 references.) (SM)

Reproductions supplied by EDRS are the best that can be made
from the original document.

ED 464 498

Constructivist Inspiration: A Project-Based Model for L2 Learning in Virtual Worlds

REBEKAH SIDMAN-TAVEAU, University of Texas at Austin
MARINA MILNER-BOLOTIN, University of Texas at Austin

Imagine foreign language students shopping in department stores, ordering in restaurants, and visiting cultural sites in the country of the target language. Some of the rich learning opportunities that emerge from these authentic cultural experiences can be simulated (for little or no cost) with virtual trips on the World Wide Web. However, we lack practical and theoretically based teaching models to structure this type of learning in the field of foreign language education (FLE). The Project-Based Learning approach has the potential to address this issue as well as other critical needs in FLE. Project-Based Learning is a comprehensive constructivist-based approach that engages students in the investigation of authentic problems. Research has shown the approach to be effective in enhancing student motivation and fostering higher order thinking skills, especially when supported by Internet technology. This paper focuses on the theoretical basis for Project-Based Learning and describes an instructional model developed and employed by the authors at a large Southwestern university. The model was put into practice for several web-based Spanish language lessons in which thousands of students engaged in virtual cultural experiences on the World Wide Web. Afterwards, students submitted enthusiastic comments and described a variety of types of language and cultural learning. Creative student products demonstrated engagement in the lessons and the application of grammatical and lexical topics from the course. Extensive use of on-line language and cultural resources was also evident. Because several challenges arose during the lessons, the authors present a number of suggestions for addressing those challenges in future applications.

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY

Mark Carpenter

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

1

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

✓ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

INTRODUCTION

Technology is an increasingly important part of the classroom and the use of the Internet is becoming more common in the field of foreign language education (FLE). At the same time, there is a new emphasis on improving students' higher order thinking skills and integrating cultural learning into the foreign language classroom (ACTFL, 2001; Gonglewski, 1999). In addition, recent research has recognized the importance of affective factors such as motivation and strategy use in foreign language learning (Ellis, 1994). How do we address these challenges for language learning while responding to current pedagogical and technological trends? The field of FLE lacks practical and theoretically based models for achieving these goals, particularly in the area of Computer Assisted Language Learning (CALL).

1.027259

BEST COPY AVAILABLE

Project-Based Learning (PBL) is one possible solution. PBL is a constructivist-based approach that aims to address the above questions. The approach originated more than a century ago with John Dewey and his followers (Dewey, 1938; Kilpatrick, 1918) and has been widely researched since then in a variety of disciplines outside FLE. Research has shown that PBL is effective in enhancing student motivation and fostering higher order thinking skills as well as in enabling students to gain deeper understandings and valuable content knowledge (Barron, 1998; Stites, 1998). PBL has also been shown to be particularly effective when supported by Internet technology (Blumenfeld, 1991; Edelson, Gordin, & Pea, 1999). This paper has two main purposes: the first is to provide an overview of the theoretical basis for PBL, and the second is to describe a practical model for employing PBL in foreign language instruction. In addition, the paper will discuss the application of this model in web-based lessons for a first year Spanish language course at a large Southwestern university. The student responses, lesson products, and perceptions of learning will be described. The challenges of this application and suggestions for future applications will also be discussed. The latter sections of this paper include the first author's observations and descriptions of the Spanish language application. While these results are not proof of the model's success, they do suggest its feasibility and provide an innovative example of how Internet enhanced PBL can be applied in FLE.

The Project-Based Learning Approach: A Theoretical Basis

Project-Based Learning is a comprehensive approach designed to engage students in the investigation of real life problems (Barron, 1998; Blumenfeld et al., 1991). Its defining characteristics include the use of authentic materials and a focus on student-centered learning. Students' questions and interests influence the direction of the projects and the learning process is emphasized through the use of formative rather than summative assessment (Angelo & Cross, 1993). Similarly, students' metacognitive awareness[1] is cultivated through various reflection assignments (Moore, 1994; Wolf, 1989). In this PBL environment, the instructor serves not as an authoritative figure who corrects and commands students, but as a facilitator who encourages and guides them. The facilitator supports the inquiry process with a variety of resources and scaffolding, which enables learners to extend their skills and knowledge to higher levels (Barron, 1998; Collins, Brown, & Newman, 1989). In addition, students produce authentic artifacts such as a travel itinerary or publication. These artifacts allow learners to communicate their understanding of the lesson material while demonstrating their ability to apply theoretical knowledge to real life situations.

[1] Metacognitive awareness is knowledge about one's self as a learner, the task, and effortful processes, which facilitate the acquisition and use of knowledge (Alexander, Schallert, & Hare, 1991).

CONSTRUCTIVIST THEORY

The characteristics of PBL mentioned above are all based on principles derived from constructivist learning theory. Constructivist theory maintains that learners play an active role in the construction of their own knowledge. Therefore, affective factors such as motivation and strategy use have a large impact on the learning process. Learning thus needs to be student-centered, and learners should be encouraged to make their own meaningful connections. Another central concept of constructivism is the notion of "Disequilibrium", initially introduced by Piaget. Piaget wrote that when learners encounter new knowledge that does not fit within their preexisting framework, it causes disequilibrium (Fosnot, 1996). This condition leads to deeper learning, where the learner's preexisting schema must be expanded or reorganized. A general principle derived from Piaget's theory is that errors and uncertainties, which occur when learners are confronting new knowledge, are a natural and important part of the learning process (Reagan, 1999). Errors are, therefore, not be minimized or avoided in PBL. Students are encouraged to test new ideas.

At the same time, it is essential that PBL lessons be contextualized within real world situations. Constructivist theory states that learners build from their prior knowledge. Thus, learning can be facilitated when lessons contain familiar elements. Students can then make meaningful connections by linking the new information to their background knowledge. Furthermore, the knowledge students gain is more likely to transfer to new areas if they are able to see a relationship between the instructional context and that of its authentic applications (Larkin, 1989; Oxford, 1990). When concepts are taught in settings that are similar to real-world contexts learners are better able to apply those particular concepts in future settings and situations (Svinicki, 1998). These issues of transfer are especially relevant to the learning of strategic knowledge (Larkin, 1989), which is a critical part of foreign language learning.

Strategy Use and Affective Factors

Mentioned earlier, constructivist learning theory, in particular the notion that individuals play an active role in the construction of their own knowledge, justifies the emphasis on learner variables such as motivation and strategy use. As such, learners' strategic behavior is a strong predictor of learner success. A reason for this is that strategies are the basis for the higher order thinking skills. Knowledge of how and when to employ learning strategies enables students to accomplish higher order tasks. That knowledge also allows them to affect the quality and nature of their learning (Derry, 1990). However, strategy learning and use are complex phenomena. In addition to the necessary conditions for transfer, researchers in second language acquisition (SLA) agree that motivation is a necessary precursor for strategy use (Ellis, 1994). Researchers in educational psychology have investigated a number of related factors as well. The following

section provides an overview of four factors that are addressed in the PBL design.

Conditions for Strategic Behavior

First, strategy use relies on good cognitive monitoring. Students need to be able and willing to evaluate their progress towards a learning goal and to self-correct (Garner, 1990). Second, strategic behavior depends upon student learning orientations. Students who have a performance goal orientation are mainly concerned with outperforming others and achieving success in terms of extrinsic rewards. They tend to place little or no attention on the quality of their conceptual understanding. This orientation has been shown to hinder strategic activity. In contrast, students who have a mastery goal orientation are concerned about acquiring new skills and concepts. They are generally more attentive to the process of learning and are more willing to put in additional effort. The latter is said to promote strategic behavior (Ames, 1992).

Third, students' self-assessments (what they perceive they are capable of achieving) and expectancy value (the outcome they anticipate for a particular task) are equally influential. If learners do not believe they are capable of a task or that a particular action will lead to success, they will be less likely to employ learning strategies. Without high self-esteem and a tendency to attribute success to effort, they are less likely to initiate or persist in strategic activity (Paris & Winograd, 1990). Fourth, students' attribution styles play a substantial role. Students who attribute success to effort are likely to engage in strategic behavior while those who attribute it to an innate ability are unlikely to adapt a strategic approach (Benenson & Dweck, 1986).

The constructivist-based elements of PBL: formative assessment, reflection, and the facilitator role all address the issues and requirements associated with the above factors. In formative assessment instructors focus on the assessment of the student learning process rather than on the final product. The aim is to bring attention to and give credit for the productive ways in which students have gone about learning and achieving certain results. This allows students to become aware of their own development and the importance of "mastering" a topic rather than simply getting the right answer. One example in FLE is the assessment of verb conjugation knowledge. In traditional exams students are often asked to do fill in the blanks or cloze tests where they write the appropriate word (often a conjugated verb) to fill in the gap in a particular text. In some cases students simply do a good job of predicting the contents of the exam, and memorizing the individual word formations. Typically, these students receive good scores on the exam, but they are often not able to remember the verb conjugations or employ them in future situations. In other cases, students have paid attention to the different verb patterns and learned specific models for conjugations that they can apply to verbs appearing on the exam. These students generally receive similarly high scores on a traditional exam, but are more likely

to be able to apply what they have learned to future situations. Formative assessment is a means of recognizing such differences in process and encouraging the deeper learning that is associated with the latter case.

Similarly, in reflective assignments, students are asked to think about what they have done and how their behavior has led to certain outcomes. In these instances the facilitator helps learners to name strategic actions and to recognize where they have been successful. He or she provides positive feedback when students work efficiently and encourages them to persist in the task. The focus, then, is on increasing students' confidence and motivation by enabling them to see that they are in control of their own learning and that they can affect their own success through strategic behavior. Overall, these aspects of the PBL design are geared toward enabling students to see themselves as the locus of control. Their success is not based on an innate ability or some uncontrollable factor but upon their effortful and efficacious behavior.

Social Constructivism

In addition to addressing the issues that emerge from constructivist learning theory, the PBL approach is supported by research in the social constructivist branch of constructivism. Social constructivism is playing an increasingly important role in the field of second language acquisition (Lantolf & Appel, 1996; Reagan, 1999) and the social constructivist elements of PBL are highly relevant to foreign language learning. Social constructivism takes influence from the prominent Russian psychologist Lev Vygotsky, who studied the role of language in human development. One of Vygotsky's most important contributions to this area is the notion that mediational means intersect with the individual and social planes (Vygotsky, 1978). In other words, mediational means, which include verbal language and visual arts, interact with our cognition and are socioculturally situated (i.e. influenced by social and cultural contexts). Thus, when we use different types of mediational means to represent ideas and concepts, it helps us to reflect upon them and develop new perspectives (Fosnot, 1996). For this reason, the PBL design includes student production of authentic artifacts. The use of different mediums to create an artifact enables students to reflect on and articulate new concepts.

Another important notion forwarded by Vygotsky is the zone of proximal development (ZPD). The ZPD is the distance between the actual development, determined by the learner's independent problem solving, and the potential development, determined by the learner's problem solving with the guidance of an adult, or in collaboration with a more knowledgeable peer (Lantolf & Appel, 1996). Bruner extended this notion to the metaphor of scaffolding. Scaffolding occurs when a more knowledgeable participant creates supportive conditions in which a novice can extend current skills and knowledge to higher levels of competence (Lantolf & Appel, 1996). Researchers in FLE have also noted, though, that scaffolding can take place through interaction with texts and can be a

mutual two-way process between peers (Villamil & de Guerrero, 1998). Scaffolding should not be mistaken as something only the teacher can provide for the student. Learners can also direct this process (Vygotsky, 1978). The application of scaffolding in PBL involves a number of instructor roles. These roles result in three basic types of scaffolding: coaching, guiding, and modeling. Coaching deals with recruiting interest, supporting students in their pursuit of specific goals, and helping students to control frustration or anxiety. Guiding entails simplifying projects by separating tasks into manageable steps, creating metaphors for the process, and marking critical features and discrepancies in the material. Modeling involves the presentation of idealized models and approaches and the demonstration of processes and strategies used by experts (Barron, 1998).

An additional aspect of social constructivism that is relevant to PBL is the notion of situated motivation. Like constructivists, social constructivists believe that motivation is influenced by cognitive assessments and individual constructs based on personal status and experience, but that these are contextualized and impacted by aspects of specific learning situations. Consequently, motivation is unstable and varies by context. Motivation is affected by students' values, expectations, and autonomy. It is further influenced by the interpersonal relations between students, their peers, and their teachers, the lesson structure, and the types of support that are provided (Wentzel, 1999). In light of this stance, advocates of PBL affirm that lesson topics, instructional features, and student/teacher roles have great potential to affect motivation.

PBL Model

Implementing PBL learning into everyday practice requires a number of steps as well as carefully thought out lesson plans. The following are suggested steps that have been useful to the authors in two introductory university classes of different disciplines.

Step 1: Set clear learning objectives. Start by thinking about what types of learning outcomes should be targeted in the lesson. There are many different possible outcomes, ranging from the learning of basic facts to changes in attitude. The appropriate number of objectives for a particular setting will depend on the instructor, the students, and the duration of the lesson.

Step 2: Select a real life problem. The problem selected for PBL should be one that has the potential to engage students' interest and connect learner activities to the concepts being studied. The topic should be broad enough to allow students to make choices within the topic area and have room to investigate their own questions and interests.

Step 3: Describe the "real world" context in which the problem would usually occur. It is important to place the learning in a context so that students can see a

clear connection between the classroom work and its future applications. As discussed earlier, the contextualization of lessons makes the transfer of the knowledge more likely, and also makes the topic more understandable and meaningful to the learners. Students are more likely to be motivated if they can see a connection between the lessons and their daily lives. The choice of the problem context, however, will be constrained by the degree to which the context can be simulated and the types of resources available to the teacher.

Step 4: Compile authentic materials and resources. Authentic resources include the materials that professionals use to solve problems in real life situations such as dictionaries, reference books, photographs, money converters, statistics, etc. Such materials should be used to help contextualize the learning in a real life situation. In the case of FLE, teachers should also gather culturally authentic materials; materials created by members of a target culture for other members of the same target culture (Kramsch, 1993). These resources should provide a cultural context within which learners can find clues to help them decipher the linguistic material.

Step 5: Consciously employ the facilitator role. Many instructors are accustomed to a more traditional role where the focus is on providing right answers and correcting students. The PBL environment is more open ended. First, the goal in PBL is not only for students to learn a specific body of content knowledge, but also to have them become more autonomous as they gain the skills and strategies necessary for them to solve problems on their own. Second, the use of authentic materials and open-ended projects increases the variety and scope of possible student questions. As such, it is not feasible for instructors to know or research the answers to all the questions that students may come up with. Instead, the facilitator aims to support the inquiry process and the ways in which students obtain, interpret, analyze, and evaluate information. The facilitator directs students to the appropriate clues and resources, provides strategy training, helps students to divide larger projects into less daunting tasks, and supports different types of scaffolding. In sum, the goal is not for the facilitator to provide the right answers or for students to find predetermined solutions, but for students to develop skills and strategies and to gather content as they focus on solving real life problems.

In one successful PBL example, students in a physics class were given specifications from NASA for efficient and economic rockets and asked to solve the problem of how to best design them. When the students asked questions about different rocket designs and their effects on the launch parameters, the instructor introduced them to different techniques for measuring the height of the rocket launch rather than simply lecturing them on projectile motion. The students then became engaged in testing their rocket designs using the different

techniques and were able to answer more specific questions on their own (Barron, 1998).

Step 6: Decide how you will assess the students. Formative assessment and reflection assignments are an integral part of PBL since they emphasize processes rather than just final products. In addition to continuous feedback from the instructor, students should have the opportunity to evaluate their own work and to assess their progress towards their goals (Anderson & Speck, 1998; Slater, 1994; Smith, 1998). Formative assessment should be scheduled at least once during the duration of the project, but would ideally occur more frequently. Formative assessment should also take place before any exams or final products. In contrast, reflection assignments can be scheduled towards the end of the lesson so that students can reflect on the processes that led to their results. Lastly, students should know ahead of time that they will receive credit for thoughtful learning and strategic approaches. The grading system should be outlined clearly in a rubric or in course instructions (Walvoord & Anderson, 1998).

Step 7: Outline the appropriate artifact choices. The final assignment in the project should not be an exam or a course paper. It must be an authentic artifact; one that would be used to solve problems and accomplish tasks in real life situations. If possible, the artifact should have an authentic purpose, a real audience, and professional guidelines that are relevant to the course goals. It should also have the capacity to reflect students' understanding and allow them to explore real issues and concepts. In addition, it is important to provide some choices for students in terms of the types of media and formats they select for their artifacts. Some examples may include creating Powerpoint slide shows, web or poster presentations, and hand-drawn or computer-generated images.

TECHNOLOGY

The Internet is often of great assistance in the application of the PBL model (Blumenfeld et al., 1991; Edelson et al., 1999; Stites, 1998). Artifacts can be created and shared using web technology and web materials can assist in creating an atmosphere that mirrors real life contexts. Images and sounds can be incorporated into the project design and a variety of relevant resources can be centralized within one web page. When selected carefully, authentic multimedia materials on the World Wide Web have been shown to be valuable educational resources, particularly in the area of FLE (Gonglewski, 1999; Warschauer & Healey, 1998).

With the web, it is also possible to post instructions on-line and to separate tasks into steps connected through hyperlinks. Relevant instruction in the form of models or strategy advice can then be embedded into each step. Moreover, students can access information and submit assignments on-line at their own pace.

PBL IN THE FOREIGN LANGUAGE CONTEXT

How can the PBL approach be applied to foreign language learning on the Internet? El Mundo Hispano Webquest (The Hispanic World Webquest) is one example. This web quest is an ongoing project and a preliminary application of PBL in a series of Spanish language web-based lessons. The lessons are part of the curriculum being employed in a first-year Spanish language course at a large southwestern university. The lessons were first tested in Spring 2000, and have now been completed by over 700 students (approximately thirty classes). The students enrolled in the classes were predominately American undergraduates who had a variety of academic majors. Their Spanish proficiency ranged from novice (learners who had never studied Spanish) to advanced beginning (students who had taken one to three years in high school[2]).

The following description and explanation of the PBL application in the Spanish classes demonstrates a number of possible themes for PBL in FLE, shows how the approach can be implemented on the web, and reports on some of the initial student responses. The description is based on the first author's teacher observations, student work, and on-line feedback submitted over the past three semesters. The students performed the bulk of the activities in Spanish.

THE PBL APPLICATION IN SPANISH CLASSES

Hundreds of undergraduate students connected to a class web site from their homes and university laboratories at their convenience. Over the course of the semester, they completed three on-line lessons. The first two lessons were weeklong warm-up web activities that took place prior to the principle PBL lesson. In the first web activity, *Compras* (Shopping) students were given a problem scenario in Spanish. They were told that they were going on vacation in the Caribbean and that they needed to buy some new clothes before they went. The students were then asked to choose two clothing items from a list of target vocabulary and to shop for the items in one of several on-line clothing stores based in Spain. First, students took notes describing the items they had chosen (material, size, color, and brand) and the price (in pesetas and dollars), using an on-line dictionary and money converter. Next, students brought their notes to class and worked in pairs to create a dialogue in which they shared and commented on each other's purchases. The purpose of this assignment was to give students a basic introduction to using the web in Spanish and to allow them to practice newly learned clothing vocabulary (see Appendix A).

The second web activity, *Restaurantes* (Restaurants) gave students more practice with simple Spanish language activities on the web. The problem scenario for this lesson was that students were going on a date to a Mexican restaurant but their companion did not speak Spanish and both of them had

[2] Students who had taken Spanish in high school within the last three years, but who received a grade of "C" or lower on a Spanish language placement exam, were permitted to stay in the first year course.

certain dietary restrictions and preferences. The students were required to read, look up, and make inferences about new vocabulary from one of two authentic Mexican food menus in order to select items that met their dietary needs. Subsequently, students brought this information to class and worked in pairs to create a dialogue between themselves and a waiter. The objectives of this lesson were: (a) to give students practice with recently learned food and restaurant vocabulary, (b) to enable students to learn about different kinds of Mexican food, and (c) to allow students to practice reading strategies with authentic Spanish language texts (see Appendix B).

In the principle lesson, El Mundo Hispano Webquest, students were given a scenario in which they won a "virtual" ticket for Spring break vacation. The ticket enabled them to travel with a classmate to their choice of Mexico, Argentina, or Spain. However, each student had to first work with their partner to create an appealing and realistic one-week travel itinerary based on real specifications from a local travel agency. .The objectives of this lesson were to help students learn about the target cultures, gain experience, and practice strategies for reading authentic Spanish language texts on-line. Additionally, students discussed future and past events and used travel related vocabulary, dates, and descriptive words in Spanish.

El Mundo Hispano Webquest

Upon entering the site, students saw a navigational bar (which appeared on each of the lesson pages) with links to a variety of resources: instructions, models, strategies, grading criteria, dictionaries, vocabulary reference, recommended tourist sites for each country, and maps. The visual design for this bar set the scene for the cultural element of the project and was based on a sculpture created by Joaquín Torres García, a Uruguayan artist who sought to represent a Pan American identity. The tourist links in the site had been pre-selected for their quality, simplicity, appeal, and stability. Links were organized by country and region. The sites included tour companies, hotels, resorts, museums, and cultural centers. In addition, several Spanish language search engines were listed. Each of these resources was described in English or simple Spanish (comprehensible to first year students) and made accessible by clicking on an image representing the site content (Appendix C1).

A table below the navigation bar divided the project into seven short steps or activities. The first activity *Entrevista* (Interview) endeavored to get students thinking about their related background knowledge. For example, students were asked if they had traveled to a Spanish speaking country and when and where they heard Spanish in their hometown. The second activity *Escoge el país* (Choose the country) encouraged students to generate their own questions and interest for the project so that they could conduct focused investigations of the sites. For example, the activity asked what country they would choose to visit and why and what kinds of activities they would like to do while traveling. Students were

also asked to select Spanish phrases from a list of travel related terms and encouraged to scan for key words in the sites (Appendix C2).

Following these introductory activities, students were told to choose a partner with whom they would like to travel and to begin research on their travel destinations. Instructions and a model for a third activity were then provided in the site: each pair of students was to negotiate their travel interests by e-mail, or in person, and give a written copy of their dialogue to their instructor. This assignment gave the teacher an opportunity to provide credit for and feedback on the students' processes and planning. The instructor also responded to students' questions and provided support for their work throughout the project.

In the fourth activity, the student pairs worked together on the web site to find specific places they would like to visit and activities they would like to do. They then wrote up their plans in an authentic travel itinerary format that accounted for each day's activities, meals, and hotel locations. These itineraries were supposed to be feasible, both in regard to the number and type of activities and the distances between locations. Detailed descriptions and references to a variety of locations and activities were required as well.

In the fifth activity, students prepared to present and discuss their work to the class. Many students chose to create colorful poster boards with photographs from the web and drawings of their destinations. The presentations were done in Spanish over the course of two class periods. During these classes, each pair responded to questions and received feedback from their instructors and peers. Afterwards, students completed two final activities: a written account of their trip in the past tense (step six), and an on-line reflection form (step seven). The goal of the written account was for students to personalize the story of their trip while practicing a variety of verbs in the past tense. The purpose of the reflection form was to encourage students to reflect upon what they had learned and how they had arrived at their project results.

Initial Results

Overall, the itineraries and stories created by students in the courses have been vastly different and highly creative. Projects dealing with Mexico alone reflected a diversity of interests. One group of students found clubs to visit and places to do a variety of water sports. A second group wrote about festivals in the villages and an organic farm. A third group discovered gourmet restaurants, art museums, and a theatre. Some of the students made up elaborate details about whom they met. Others described what they ate, and a number of them talked about how they felt as they conducted their travels.

Remarkably, these first year students did all of these activities, presentations, and projects in Spanish. For the most part, the students employed travel vocabulary and grammatical principals that they had studied in the course that semester. However, many students also used new lexical items and

grammar rules from the websites to describe their travels. The accuracy and sophistication of their work suggests that they had applied different types of strategic and declarative (or factual) knowledge. The itineraries showed an understanding of how to apply basic verb models to conjugate new verbs, and how to employ rules to determine the gender and the appropriate articles for nouns. The students also demonstrated their knowledge of Spanish/English cognates by correctly deciphering and incorporating new words into their written and oral work. Overall, they seemed to have applied their knowledge of the language into practice.

Feedback submitted in the student reflection forms revealed equally positive results regarding the PBL lessons. Students were informed that they would not be graded for their opinions on this form, but that they would simply receive credit for completing it. There was no length requirement for the reflection. In spite of these loose guidelines, hundreds of students wrote lengthy comments describing how they had enjoyed the lessons. They noted a variety of worthwhile learning outcomes such as acquiring vocabulary and cultural information. Some of the students even said they gained new perspectives and more positive attitudes towards the target culture.

In the Fall 2000 semester one student, who had not studied Spanish before and who had never been outside of his home state, wrote that he liked the assignment because it forced him to learn more about Argentina; a country he would not have otherwise thought of visiting. The student reported finding a lot of activities that he would like to do in Argentina and learned that the country is more modern and has a better economy than many of the other South American countries. Another student suggested that he liked the challenge of trying to figure out how to write complex sentences and going beyond the words and phrases taught in the textbook. This particular student also learned more about the extensive occupation and influence the Moors had in Spain. A third student said that she enjoyed pretending to have enough money to take a trip and that she had fallen in love with *El Prado*, a well-known art museum in Spain. Many other students said they appreciated taking the "Virtual Vacation," and some said it had sparked an interest in traveling abroad. Finally, two students from a Spring 2000 course actually used their travel itinerary for a real trip to Mexico the following summer, and another student used the assignment to gather information for a real spring break trip with his parents.

Challenges

The primary challenge facing the PBL model in this application was to carry out the constructivist-based elements, namely the facilitator role and the formative assessment. While web editors make it easy to post information and resources, partition tasks into manageable steps, and embed instruction into lessons, the fact that the instructor is not present during students' work on-line makes it difficult to know when and what types of scaffolding are needed. One

of the authors found that to bridge the class time and work on-line, it was helpful to bring a computer cart into the class to demonstrate certain procedures and initiate student questions pertaining to the specific tasks and texts in the web site. At least one on-line demonstration should occur during the PBL lesson if the web is used as the primary tool.

Formative assessment also proved to be difficult, not because there was a lack of types of formative assessment, but because the principles behind this type of assessment seemed incompatible with the course curriculum design. First of all, the course itself had a full curriculum. Assignments included three exams, one final exam, three oral recordings, one final recording, approximately twenty four writing assignments outside class, three in-class writing assignments, work on grammar and vocabulary quizzes once a week in a lab, and a lab final. Additional miscellaneous work included quizzes, a workbook, textbook and supplementary textbook exercises, and participation in class four days a week. Therefore, even though the web lessons were well integrated with the course assignments, they were just one of many items instructors needed to grade and students needed to turn in. Consequently, there was little enthusiasm for adding additional types of assessment. To handle this challenge in future applications, the authors recommend that teachers allow time to appropriately integrate PBL into a curriculum and realize that the implementation may require some changes in the overall course plan. .

Another challenge relating to the curriculum was the focus on final products rather than processes. In the course where the PBL model was applied exams were worth 55% of the course grade, the final oral recordings were worth twice as much as the interim recordings, and the final lab test was equal to the entire course work in the lab. The concept of giving credit for the processes involved in the PBL web-based lessons was, therefore, somewhat of an anomaly. Teachers in FLE may have to work diligently to articulate the value of formative assessment and promote this aspect of PBL.

Fortunately, the Internet seemed to simplify procedures from the student point of view since they were able to get instructions and assistance, conduct their research, and complete their assignments all from one web site. On the other hand, the submission of on-line work and distribution of that work to course instructors required more complicated computer programming. It is recommended that instructors, who are not experts in computer programming, seek assistance with this aspect of the PBL approach.

Lastly, because PBL is fairly new in FLE classrooms, and some instructors are still not sufficiently familiar with the Internet, it is essential that administrators of the approach allow the time and means for teacher training and student orientation. Web sites should be made to stand on their own with precise but simple instructions. After several trial runs, the authors found it important to write instructions using both Spanish (that corresponded to the

students beginning-level) and English in order to support student comprehension and engagement.

Conclusion

This initial application of PBL in the context of a first year Spanish language course suggests that the model is feasible, especially with the assistance of the Internet. The Internet offers access to authentic cultural and linguistic materials reflecting different dialects and cultures in the Spanish-speaking world. Moreover, most of the applications described in this study can be carried out with basic web editing skills. In addition, students' comments and work implied their appreciation of the approach. They enjoyed taking the "virtual vacation" and reported learning about a diversity of cultural and linguistic topics. Some students also mentioned gaining new strategies for language learning and research on the Spanish language web.

Despite these signs of student enthusiasm and learning, more rigorous research is needed to formally evaluate the success of this PBL application. In addition, research is needed to determine whether PBL can lead to the improvement of higher order thinking skills and increased motivation for foreign language learners. Nonetheless, this preliminary exploration does suggest that PBL offers a promising solution to the problem of how to use the Internet within FLE. The approach has a sound theoretical basis and can be translated into a practical teaching model such as the one presented in this paper. Project-Based Learning holds great potential as a means for meeting current needs in FLE and it merits further exploration in the field.

Acknowledgements

The authors would like to thank Dr. Marilla D. Svinicki and Dr. Zena T. Moore from the University of Texas at Austin for their help and encouragement.

References

Alexander, P. A., Schallert, D. L., & Hare, V. C. (1991). Coming to terms: How researchers in learning and literacy talk about knowledge. *Review of Educational Research, 61*, 315-343.

American Council on the Teaching of Foreign Languages. (2001). *Standards for Foreign Language Learning, Preparing for the 21st Century*. Available: http://www.actfl.org/body.cfm.

Ames, C. (1992). Classrooms: Goals, structures and student motivation. *Journal of Educational Psychology, 84*(3), 261-271.

Anderson, R. S., & Speck, B. W. (Eds.). (1998). *Changing the way we grade student performance: Classroom assessment and the new learning paradigm*. (Vol. 74). San Francisco: Jossey-Bass.

Angelo, T. K., & Cross, K. P. (1993). *Classroom assessment techniques: A handbook for college teachers* (2nd ed.). San Francisco: Jossey-Bass Publishers.

Barron, B. J. S. (1998). Doing with understanding: Lessons from research on problem- and project-based learning. *The Journal of The Learning Sciences, 7*(3,4), 271-311.

Benenson, J. F., & Dweck, C. S. (1986). The development of trait explanations and self-evaluations in the academic and social domains. *Child Development, 57*(5), 1179-1187.

Blumenfeld, P. C., Soloway, E., Max, R. W., Krajcik, J., Guzdial, M., & Palincsar, A. (1991). Motivating project-based learning: Sustaining the doing, supporting the learning. *Educational Psychologist, 26*(3,4), 369-398.

Collins, A., Brown, J. S., & Newman, S. E. (1989). Cognitive apprenticeship: Teaching the crafts of reading, writing and mathematics. In L. B. Resnick (Ed.), *Knowing Learning and Instruction* (Vol. 1, pp. 453-494). Hillsdale, NJ: Lawrence Erlbaum Associates.

Derry, S. (1990). Learning strategies for acquiring useful knowledge. In B. F. Jones & L. Idol (Eds.), *Dimensions of thinking and cognitive instruction* (pp. 347-375). Hillsdale, NJ: Lawrence Erlbaum Associates.

Dewey, J. (1938). *Experience and education.* (First TOUCHSTONE Edition, 1997 ed.). New York: A TOUCHSTONE BOOK Simon and Schuster.

Edelson, D. C., Gordin, D. N., & Pea, R. D. (1999). Addressing the challenges of inquiry-based learning through technology and curriculum design. *Journal of the Learning Sciences, 8*(3,4), 391-450.

Ellis, R. (1994). *The study of second language acquisition.* New York: Oxford University Press.

Fosnot, C. T. (Ed.). (1996). *Constructivism: Theory, perspectives, and practice.* New York: Teachers' College Press, Columbia University.

Garner, R. (1990). When children and adults do not use learning strategies: Toward a theory of settings. *Review of Educational Research, 60*(4), 517-529.

Gonglewski, R. M. (1999). Linking the internet to the national standards for foreign language learning. *Foreign Language Annals, 32,*(3), 348-361.

Kilpatrick, W. H. (1918). The project method. *Teachers College Record, 19*(4), 319-335.

Kramsch, C. (1993). Authentic texts and contexts. In *Context and culture in language teaching* (pp. 177-203). Oxford, UK: Oxford University Press.

Lantolf, J. P., & Appel, G. (1996). *Vygotskian approaches to second language research.* Norwood, NJ: Ablex Publishing Corporation.

Larkin, J. (1989). What kind of knowledge transfers. In L. Resnick (Ed.), *Knowing, learning and instruction* (pp. 283-303). Hillsdale, NJ: Erlbaum Associates Publishers.

Moore, Z. T. (1994). The portfolio and testing culture. In C. Hancock (Ed.), *Teaching, testing, and assessment, making the connection* (pp. 163-176). Lincolnwood, IL: National Textbook Company.

Oxford, R. (1990). *Language learning strategies: What every teacher should know.* New York: Newbury House.

Paris, S. G., & Winograd, P. (1990). How metacognition can promote academic learning and instruction. In B. F. Jones & L. Idol (Eds.), *Dimensions of thinking and cognitive instruction* (pp. 15-51). Hillsdale, NJ: Lawrence Erlbaum Associates.

Reagan, T. (1999). Constructivist epistemology and second/foreign language pedagogy. *Foreign Language Annals, 32*(4), 413-425.

Slater, T. F. (1994). Portfolios for learning and assessment in physics. *The Physics Teacher, 32*(9), 370-373.

Smith, K. A. (1998). Grading cooperative projects. In R. S. Anderson & B. W. Speak (Eds.), *Changing the way we grade student performance: Classroom assessment and the new learning paradigm* (Vol. 74, pp. 59-67). San Francisco: Jossey Bass.

Stites, R. (1998). *What does research say about outcomes from project-based learning?*, [On-line]. The challenge 2000 multimedia project, PBL with multimedia. http://pblmm.k12.ca.us/PBLGuide/WhyPBL.html [2001, 06 05-2001].

Svinicki, M. D. (1998). A theoretical foundation for discovery learning. *The American Journal in Psychology, 275*(6), S4-S7.

Villamil, O. S., & de Guerrero, M. C. M. (1998). Assessing the impact of peer revision on L2 writing. *Applied Linguistics, 19*(4), 491-514.

Vygotsky, L. (1978). *Mind in society: The development of higher psychological processes*. Cambridge, MA: Harvard University Press.

Walvoord, B. E., & Anderson, V. J. (1998). *Effective grading: a tool for learning and assessment* (1st ed.). San Francisco: Jossey-Bass Publishers.

Warschauer, M. H. D., & Healey D. (1998). Computers and language learning: an overview. *Language Teaching, 31*, 57-71.

Wentzel, K. R. (1999). Social-motivational processes and interpersonal relationships: Implications for understanding motivation at school. *Journal of Educational Psychology, 91*(1), 76-97.

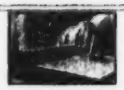
Wolf, D. P. (1989). Portfolio assessment: Sampling student work. *Educational Leadership, 4*, 35-39.

APPENDIX A

Spanish 506 - Actividad #1 ¡Vamos de compras!

Follow the steps (los pasos) 1-4 and then click on the stores link below.

Paso 1 y 2
Paso 3 y conversión
Paso 4

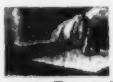
LAS TIENDAS	
 El diccionario (Español/ Inglés)	Para la conversión

http://www.utexas.edu/courses/spanish506web/compras/index.html

PASO 1

Read the scenario below carefully and look up any words you don't know.

Ustedes viven en España y van a tomar unas vacaciones en el Caribe. Durante las vacaciones van a ir a una discoteca de moda y comer en un buen restaurante. Por eso, necesitan comprar ropa nueva.



El diccionario Español/ Inglés

PASO 2

Lista 1
una camiseta
una blusa
una camisa

Lista 2
unos pantalones
unos pantalones vaqueros
una falda

PASO 3

http://www.utexas.edu/courses/spanish506web/compras/step_1.html

BEST COPY AVAILABLE

APPENDIX B

WEB LESSON 2

¡Vamos a comer a un restaurante mexicano!

Follow the steps (los pasos) first!
Navigational information is in paso 2.

Paso 1

Paso 2

Paso 3

Steps 1 - 3 due November 6

http://www.utexas.edu/courses/spanish506web/restaurantes/index.html

Paso 1 Instrucciones:

1)Read the following message carefully and look up any words you don't know.

Vas a salir con un muchacho guapo o una muchacha guapa a un restaurante mexicano y quieres presumir (show off) tu conocimiento del español.

2) Pick TWO different situations from the table below
(one for Tú and one for Tu acompañante).

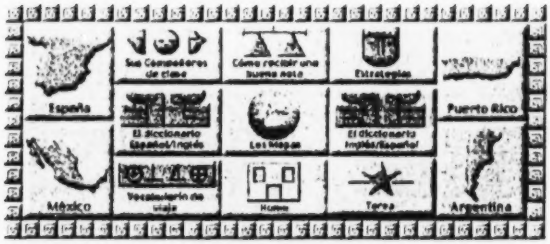
Tú	Tu acompañante
Te gusta la comida picante.	No le gusta la comida picante.
Eres alérgico/a a los productos lácteos.	Es alérgico/a a los mariscos.
Estás a dieta.	Le encanta la carne.
Te mueres de hambre.	Es vegetariano/a.
Eres un "gourmet".	Prefiere la comida sencilla.

PASO 2

http://www.utexas.edu/courses/spanish506web/restaurantes/pasouno.html

BEST COPY AVAILABLE

APPENDIX C1



Mundo Hispano Web Quest

ACTIVIDADES Y INSTRUCCIONES

You have won a virtual ticket to Mexico, Argentina, or Spain - your choice! Do the activities and read the instructions (1-7 below). They will help you create your travel itinerary in Spanish (note: verbs are in the informal imperative form)

DON'T FORGET TO CHECK OUT THE USEFUL RESOURCES ABOVE!

This is primarily a culture lesson which will allow you to practice Spanish relevant to your course work. The lesson is designed to give you plenty of choices so just find what interests you &
¡DIVIERTETE!

COMPLETE 1 & 2 ON YOUR OWN
1) Entrevista Entre" (inter) + vista (view), you know what that means!
2 Escoge (Choose) el pais This is the first step towards creating your itinerary
READ 3 - 6 FOR INSTRUCTIONS
3) Escribe (Write) su companero de viaje You will do this assignment IN CLASS. (Partner activity)
4) Hagan su itinerario en parejas Instructions on creating your travel itinerary. (Partner Activity)
5) Preparen una presentacion oral Instructions on preparing your oral presentation (Partner Activity)
6) Cuenta tu viaje Instructions for writing your travel adventures in the past tense
7) Reflexiona y Comentario Reflect on your web travels and give us your comments!

Disclaimer: The links contained in this page have been compiled from a variety of sources. While every attempt has been made to find sites of quality, we do not guarantee their accuracy. The University of Texas at Austin is in no way responsible for the information contained in these sites.

http://www.utexas.edu/courses/spanish506web/mundo/index.html

BEST COPY AVAILABLE

APPENDIX C2

Mundo Hispano Web Quest

ESCOGE EL PAÍS

This form is here to help you. You can use it to make a printable record of your travel choices and get

practice with relevant vocabulary

ideas for what to ask your partner(s) in the next exercise

help thinking about WHAT to look for before entering the Spanish language sites (use the questions to narrow your search before you go into the sites)

Remember to respond in Spanish!

1. **¿Como te llamas?**

Nombre

Apellido

Numero unico del clase Select Instructor / Class

2. **¿Como vas a escoger el pais? (How are you going to choose the country ?) Name three factors (el paisaje, la economia, el arte, la musica, la arquitectura, la gente, la comida...) that will be important to your decision**

3. **¿Que te gusta hacer cuando estas de viaje?**

Hold down 'CTRL' (PC) or Apple (Mac) Key to select more than one item.

- visitar museos
- ver los monumentos historicos
- descansar en la playa
- ver la naturaleza (los montañas, la selva, las pampas o el bosque)
- comer en buenos restaurantes
- bailar en las discotecas
- ir de compras
- beber cerveza en un bar
- esquiar
- hacer marinismo (o bucear)

4. **¿A Cual pais quieres viajar?**

- Argentina
- Mexico
- España

http://www.utexas.edu/courses/spanish506web/mundo/pais.html

BEST COPY AVAILABLE